

- b. Each Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation. For Dischargers required to submit SMRs via CIWQS, (1) the cover letter must be uploaded directly into CIWQS and (2) violations must be entered into CIWQS under the Violations tab for the reporting period in which the violation occurred in addition to them being identified in the cover letter.
 - c. Each Discharger shall submit all laboratory analysis sheets, including quality assurance/quality control information, with all its SMR's for which sample analyses were performed.
7. The Discharger shall submit in the SMRs calculations and reports in accordance with the following requirements:
- a. **Calendar Annual Average Limitations.** For Dischargers subject to effluent limitations specified as "calendar annual average" (e.g., electrical conductivity), the Discharger shall report the calendar annual average in the December SMR. The annual average shall be calculated as the average of the samples gathered for the calendar year.
 - b. **Mass Loading Limitations.** For BOD₅, TSS, and ammonia, each Discharger shall calculate and report the mass loading (lbs/day) in the SMR's. The mass loading shall be calculated as follows:
$$\text{Mass Loading (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34$$

When calculating daily mass loading, the daily average flow and constituent concentration shall be used. For weekly average mass loading, the weekly average flow and constituent concentration shall be used. For monthly average mass loading, the monthly average flow and constituent concentration shall be used.
 - c. **Removal Efficiency (BOD₅ and TSS).** Each Discharger shall calculate and report the percent removal of BOD₅ and TSS in the SMR's. The percent removal shall be calculated as specified in section VIII.A of the Limitations and Discharge Requirements.
 - d. **Total Coliform Organisms Effluent Limitations.** Each Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7-day median of total coliform organisms shall be calculated as specified in section VIII.E of the Limitations and Discharge Requirements.
 - e. **Total Calendar Annual Mass Loading Mercury Effluent Limitations.** Each Discharger subject to mass loading effluent limitations for total mercury in section V.A.1.c.xi or section V.A.2.b.iv shall calculate and report the total calendar annual mercury mass loading for the effluent in the December SMR. The total calendar year annual mass loading shall be calculated as specified in section VIII.C of the Limitations and Discharge Requirements.
 - f. **Temperature Effluent Limitation.** For every day receiving water temperature samples are collected at Monitoring Location RSW-001, each Discharger subject to effluent limitations for temperature at section V.A.1.c.xii shall calculate and report the difference between the effluent and upstream receiving water based on the difference in the daily average temperature at Monitoring Location EFF-001 and temperature of grab samples collected at Monitoring Location RSW-001.

- g. **Chlorpyrifos and Diazinon Effluent Limitations.** Each Discharger subject to effluent limitations for diazinon and chlorpyrifos in section V.A.1.c.ix of this General Order shall calculate and report the value of S_{AMEL} and S_{AWEL} for the effluent, using the equation in section V.A.1.c.ix and consistent with the Compliance Determination Language in section VIII.K of the Limitations and Discharge Requirements.
- h. **Dissolved Oxygen Receiving Water Limitations.** Major Dischargers shall report monthly and minor Dischargers shall report quarterly in the SMR the dissolved oxygen concentrations in the effluent (Monitoring Location EFF-001) and the receiving water (Monitoring Location RSW-001 and RSW-002).
- i. **Turbidity Receiving Water Limitations.** Each Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in section VI.A.18 of the Limitations and Discharge Requirements.
- j. **Temperature Receiving Water Limitations.** Where receiving water temperature limitations apply, each Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002, except as specified in section VI.A.16, for the City of Roseville (Pleasant Grove Wastewater Treatment Plant), the El Dorado Irrigation District (Deer Creek Wastewater Treatment Plant), the City of Placerville (Hangtown Creek Water Reclamation Facility), the City of Atwater (Regional Wastewater Treatment Facility), the City of Merced (Wastewater Treatment Facility), and the City of Lodi (White Slough Water Pollution Control Facility).

C. Discharge Monitoring Reports (DMR's)

- 1. Dischargers operating "major" facilities, as designated in the Notice of Applicability, shall electronically submit DMR's together with SMR's using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic submittal of DMR's will be in addition to electronic submittal of SMR's. Information about electronic submittal of DMR's is provided by the Discharge Monitoring Report website as follows:
(http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/).
- 2. Dischargers operating "minor" facilities, as designated in the Notice of Applicability, are excepted from submitting DMR's under these requirements. However, at any time during the term of this permit, the State Water Board or Central Valley Water Board may notify such a discharger to electronically submit DMR's, at which time this exception will no longer apply.

D. Other Reports

- 1. **Special Study Reports and Progress Reports.** As specified in the Special Provisions contained in section VII of the Order, special study and progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date. Special Study Reports and Progress Reports reporting requirements will be specified by the Executive Officer in the Notice of Applicability.
- 2. Each Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions – VI.C. Each applicable Discharger shall report the progress in satisfaction of compliance schedule dates specified in Special Provisions – VII.C.7. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

3. Within 60 days of the issuance of the Notice of Applicability, each Discharger shall submit a report outlining reporting levels (RL's), method detection limits (MDL's), and analytical methods for the constituents listed in tables E-2, E-3, E-5, E-6, and E-7 that are required to be monitored by the discharge, as specified in the Notice of Applicability. In addition, no less than 6 months prior to conducting the effluent and receiving water characterization monitoring required in section IX.F, the Discharger shall submit a report outlining RL's, MDL's, and analytical methods for the constituents listed in Table E-10. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP. The maximum required reporting levels for priority pollutant constituents shall be based on the Minimum Levels (ML's) contained in Appendix 4 of the SIP, determined in accordance with section 2.4.2 and section 2.4.3 of the SIP. In accordance with section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RL's, in the permit, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit. Table E-10 provides required maximum reporting levels in accordance with the SIP.
4. **Annual Operations Report.** By **1 February** of each year, the Discharger shall submit a written report containing the following:
 - a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
 - b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
 - c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
 - d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
 - e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.
5. **Annual Pretreatment Reporting Requirements.** Dischargers subject to pretreatment program requirements, as specified in the Notice of Applicability, shall submit annually a report to the Central Valley Water Board, with copies to U.S. EPA Region 9 and the State Water Board (submittal requirements follow this section), describing the Discharger's pretreatment activities over the previous 12 months (1 January through 31 December). In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

If the Discharger has multiple wastewater treatment plants subject to annual pre-treatment reporting requirements, the Discharger may combine annual pretreatment reporting requirements for their facilities. If the reports for multiple facilities are combined, then the Discharger shall note so in its transmittal letter accompanying the submission of the annual report.

An annual report shall be submitted by **28 February** and include the following items as specified by the Executive Officer in the Notice of Applicability:

- a. A summary of analytical results from representative sampling of the POTW's influent and effluent for those pollutants U.S. EPA has identified under section 307(a) of the CWA which are known or suspected to be discharged by nondomestic users. This will consist of a full priority pollutant scan with a frequency as specified in the Notice of Applicability. The Discharger is not required to sample and analyze for asbestos. The Discharger shall submit the results of the priority pollutant scan electronically to the Central Valley Water Board using the State Water Board's CIWQS Program Website.

Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed as specified in the Notice of Applicability. The Discharger shall also provide any influent, effluent or sludge monitoring data for other constituents of concern which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 C.F.R. part 136 and amendments thereto.

- b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows or suspects were caused by nondomestic users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the nondomestic user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.
- c. The cumulative number of nondomestic users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of nondomestic user responses.
- d. An updated list of the Discharger's significant industrial users (SIU's) including their names and addresses, or a list of deletions, additions and SIU name changes keyed to a previously submitted list. The Discharger shall provide a brief explanation for each change. The list shall identify the SIU's subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall indicate which SIU's, or specific pollutants from each industry, are subject to local limitations. Local limitations that are more stringent than the federal categorical standards shall also be identified.
- e. The Discharger shall characterize the compliance status through the year of record of each SIU by employing the following descriptions:
 - i. complied with baseline monitoring report requirements (where applicable);

- ii. consistently achieved compliance;
 - iii. inconsistently achieved compliance;
 - iv. significantly violated applicable pretreatment requirements as defined by 40 C.F.R. section 403.8(f)(2)(vii);
 - v. complied with schedule to achieve compliance (include the date final compliance is required);
 - vi. did not achieve compliance and not on a compliance schedule; and
 - vii. compliance status unknown.
- f. A report describing the compliance status of each SIU characterized by the descriptions in items iii through vii above shall be submitted for each calendar quarter by the first day of the second month following the end of the quarter. The report shall identify the specific compliance status of each such SIU and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report due every 28 February. This quarterly reporting requirement shall commence upon issuance of this Order.
- g. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the SIU's. The summary shall include:
- i. The names and addresses of the SIU's subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and
 - ii. The conclusions or results from the inspection or sampling of each industrial user.
- h. The Discharger shall characterize the compliance status of each SIU by providing a list or table which includes the following information:
- i. Name of SIU;
 - ii. Category, if subject to federal categorical standards;
 - iii. The type of wastewater treatment or control processes in place;
 - iv. The number of samples taken by the POTW during the year;
 - v. The number of samples taken by the SIU during the year;
 - vi. For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;
 - vii. A list of the standards violated during the year. Identify whether the violations were for categorical standards or local limits.
 - viii. Whether the facility is in significant noncompliance (SNC) as defined at 40 C.F.R. section 403.8(f)(2)(viii) at any time during the year; and
 - ix. A summary of enforcement or other actions taken during the year to return the SIU to compliance. Describe the type of action (e.g., warning letters or notices of violation, administrative orders, civil actions, and criminal actions), final

compliance date, and the amount of fines and penalties collected, if any.
Describe any proposed actions for bringing the SIU into compliance;

- x. Restriction of flow to the POTW.
- xi. Disconnection from discharge to the POTW.
- i. A brief description of any programs the POTW implements to reduce pollutants from nondomestic users that are not classified as SIU's;
- j. A brief description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to, changes concerning: the program's administrative structure, local limits, monitoring program or monitoring frequencies, legal authority, enforcement policy, funding levels, or staffing levels;
- k. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases; and
- l. A summary of activities to involve and inform the public of the program including a copy of the newspaper notice, if any, required under 40 C.F.R. section 403.8(f)(2)(viii).
- m. Pretreatment Program reports shall be submitted as follows:
 - i. Electronically to the Central Valley Water Board using the CIWQS system or emailed as a PDF file to: RB5S-NPDES-Comments@waterboards.ca.gov; and
 - ii. Emailed to the State Water Board as a PDF file to: NPDES_Wastewater@waterboards.ca.gov; and
 - iii. Emailed to the U.S. EPA to: R9Pretreatment@epa.gov.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section III.C of this General Order, the Central Valley Water Board incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance of this General Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This General Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this General Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this General Order not specifically identified as “not applicable” are fully applicable to the Dischargers.

I. PERMIT INFORMATION

A. Background

In 1972, the Federal Water Pollution Control Act (also referred to as the Clean Water Act) was amended to provide that the discharge of pollutants to waters of the United States from any point source is effectively prohibited unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit.

On 22 September 1989, the United States Environmental Protection Agency (U.S. EPA) granted the State of California, through the State Water Resources Control Board (State Water Board) and the Regional Water Quality Control Boards (Regional Water Boards), the authority to issue general NPDES permits pursuant to 40 Code of Federal Regulations (C.F.R.) parts 122 and 123.

40 C.F.R. section 122.28 provides for issuance of general permits to regulate a category of point sources if the sources involve the same or substantially similar types of operations; discharge the same type of waste; require the same type of effluent limitations or operating conditions; require similar monitoring; and are more appropriately regulated under a general order rather than individual orders.

B. General Criteria

The General Order is designed to allow owners and operators (hereafter Dischargers) of municipal wastewater treatment facilities to discharge to surface waters of the United States as long as the discharge meets water quality objectives/criteria at the point of discharge. These facilities may be publicly owned treatment works (POTW's), as defined at 40 C.F.R. section 403.3, or privately owned treatment works, as defined at 40 C.F.R. section 122.2. This General Order covers major and minor discharges and does not specify eligibility criteria for flow.

II. DISCHARGE DESCRIPTION

A. Eligible Discharges

The municipal wastewater treatment facilities to be covered by this General Order receive and treat primarily municipal and domestic sewage (i.e., waste and wastewater from humans or household operations), but may also receive and treat septage, commercial and industrial wastewater, storm water, and dry-weather diversions from municipal separate storm sewer (MS4) systems. This General Order does not authorize discharges to surface waters directly from septic tanks or discharges that are comprised solely of non-municipal wastewater (e.g., commercial wastewater, industrial wastewater, or storm water).

This General Order covers municipal wastewater treatment facilities that provide secondary, advanced secondary, or tertiary treatment. Secondary treatment facilities are defined as those meeting the secondary treatment regulations at 40 C.F.R. part 133. Secondary treatment processes generally include a combination of physical and biological treatment to remove biodegradable organics and suspended solids. Advanced secondary facilities provide additional treatment beyond secondary (e.g., filtration). Tertiary facilities are defined as those providing filtration and disinfection equivalent to the levels required by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW) reclamation criteria at California Code of Regulations (CCR), Title 22, division 4, chapter 3, (Title 22). This General Order does not cover discharges that do not receive, at a minimum, secondary treatment (e.g., primary treatment, equivalent-to-secondary treatment).

This General Order covers municipal wastewater treatment facilities that provide disinfection using either chlorine or ultraviolet light (UV), but does not cover facilities that provide disinfection using alternative disinfection methods (e.g., ozonation or pasteurization).

B. Screening Levels

Attachment C contains screening levels based on water quality objectives/criteria. The most restrictive criteria are necessary because this Order is a general order covering discharges to all surface waters in the Central Valley of California. If municipal and domestic supply (MUN) is a beneficial use of the surface water, then the most restrictive human health-based criteria are used. If MUN is not a beneficial use, then the most restrictive human health-based criteria are not necessary. If the aquatic life criteria are more restrictive than the human health-based criteria, then the aquatic life criteria are used.

Upon receipt of a Notice of Intent for coverage under this General Order, the Central Valley Water Board will conduct a reasonable potential analysis (RPA) using the screening levels in Attachment C in accordance with the procedures detailed in section V.C.3 of this Fact Sheet. If the RPA indicates that the discharge has reasonable potential to cause or contribute to an exceedance of applicable water quality objectives/criteria for parameters for which effluent limitations are established in section V.A of this General Order, and the Discharger is capable of complying with the water quality objectives/criteria and associated effluent limitations at the point of discharge, without consideration of dilution credits (i.e., end-of-pipe), then the Discharger will be enrolled under this General Order and the Executive Officer shall indicate the applicable effluent limitations in the Notice of Applicability. A Discharger not currently meeting the water quality objectives/criteria and associated effluent limitations but in the process of implementing upgrades that will enable compliance under a compliance schedule in this General Order or a separate enforcement order (e.g., Time Schedule Order or Cease and Desist Order) may be enrolled under this General Order.

III. NOTIFICATION REQUIREMENTS

The Notice of Intent, as shown in Attachment B, is intended to provide the Central Valley Water Board with information necessary for a determination of suitability for coverage under this General Order. The information required to be completed in the Notice of Intent in Attachment B meets the requirements established at 40 C.F.R. section 122.28(b)(2) and satisfies the requirements for a report of waste discharge (ROWD) established by Water Code section 13260. Water Code section 13260 requires a ROWD to start the application process for all waste discharge requirements (WDR's) and NPDES permits, except for general WDR's or general NPDES permits that use the Notice of Intent to comply or specify the use of an alternative application form designed for the permit. Submittal of the Notice of Intent replaces the requirement of discharges to provide U.S. EPA Application Forms 1 and 2A. The requirement to provide a single application form represents a less burdensome procedure for applicants and the Central Valley Water Board, while requiring

submittal of all necessary information pursuant to NPDES regulations at 40 C.F.R. section 122.28(b)(2) and Water Code section 13260.

Dischargers seeking coverage under this General Order are required to submit a complete Notice of Intent, as detailed in Attachment B, which includes:

A. Requirements for All Dischargers

1. The appropriate first annual fee as required by Title 23 of the CCR, Division 3, Chapter 9, Article 1. The current fee schedule is available at the following website: <http://www.waterboards.ca.gov/resources/fees>. (Checks must be made payable to the State Water Resources Control Board.)
2. Discharger information listed in section 2 of Attachment B.
3. A facility description on official letterhead that includes the items listed in section 3 of Attachment B.
4. Pretreatment program information, if applicable.

B. Additional Requirements for Specific Dischargers

1. **Low Volume Dischargers.** Section 1.3, Step 8 of the SIP reads, in part, "*The RWQCB shall require periodic monitoring (at least once prior to the issuance and reissuance of a permit) for pollutants for which criteria or objectives apply and for which no effluent limitations have been established; however, the RWQCB may choose to exempt low volume discharges, determined to have no significant adverse impact on water quality, from this monitoring requirement.*" Section IX.F of the Monitoring and Reporting Program requires effluent for priority pollutants twice during the permit term and receiving water monitoring for priority pollutants once during the permit term. Low volume Dischargers may qualify for an exception to the sampling requirements for some or all of the priority pollutants, provided the Discharger can sufficiently justify that the discharge will have no significant adverse impact on water quality. Dischargers seeking an exception to the sampling requirements for priority pollutants must submit justification as part of the Notice of Intent. If the Central Valley Water Board finds that the justification is not sufficient to grant an exception to the sampling requirements, the Discharger will be required to analyze the discharge for all priority pollutants as part of the Effluent and Receiving Water Characterization Study required in section IX.F of the Monitoring and Reporting Program (Attachment E).
2. **Existing Dischargers.** Dischargers currently regulated under an existing individual NPDES permit ("existing Dischargers") may provide additional representative data for the effluent and/or receiving water that they wish to be considered that has not been reported in the California Integrated Water Quality System (CIWQS) during the last 3 years, if available. If an existing Discharger has completed a major upgrade to their existing facility for which representative data is not available from the upgraded facility or the upgrades have not been completed, the Discharger shall provide estimated data for the proposed effluent and receiving water and for the priority pollutants and other constituents of concern listed in section IX.F of the Monitoring and Reporting Program (Attachment E). The Discharger will be required to sample the effluent and report the analytical results for the priority pollutants and other constituents of concern listed in section IX.F of the Monitoring and Reporting Program (Attachment E) within 18 months for an upgraded facility that is fully operational at the time of the issuance of the Notice of Applicability or within 21 months following completion of construction of the upgrades to the existing facility.

3. **New Dischargers.** New Dischargers shall provide either analytical results (if the proposed new discharge is from an operational facility) or estimated data (if the proposed new discharge is from a new facility for which construction and startup has not been completed) for the proposed effluent and receiving water for the priority pollutants and other constituents of concern listed in section IX.F of the Monitoring and Reporting Program (Attachment E). If estimated data are provided, the Discharger will be required to sample the effluent and report the analytical results for the priority pollutants and other constituents of concern listed in section IX.F of the Monitoring and Reporting Program (Attachment E) within 18 months for a new facility that is fully operational at the time of the issuance of the Notice of Applicability or within 21 months following completion of construction of a new facility that is not fully operational at the time of the issuance of the Notice of Applicability.
4. **New or Increased Discharge.** Dischargers requesting a new discharge or expanding facility capacity beyond their current permitted average dry weather flow shall provide an antidegradation analysis and a feasibility analysis for wastewater disposal, regionalization, and recycled water alternatives.

The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Resolution No. 68-16 requires that existing water quality be maintained until it has been demonstrated that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in water quality less than that prescribed in State policies. Additionally, Resolution No. 68-16 requires that any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters be required to meet WDR's that result in the best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained. The antidegradation analysis shall be developed in accordance with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16 and guidance in Administrative Procedures Update (APU) No. 90-004, *Antidegradation Policy Implementation for NPDES Permitting*.

Pursuant to section 2, Article X, California Constitution, and Water Code section 275, on preventing waste and unreasonable use of waters of the state, the Central Valley Water Board encourages, wherever practicable, water conservation and/or re-use of wastewater. Therefore, to obtain coverage under this General Order, Dischargers are required to evaluate their wastewater disposal, regionalization, and recycled water alternatives.

5. **UV Disinfection Dischargers.** Dischargers that use UV disinfection shall provide a copy of the site-specific engineering study and DDW approval letter if requesting site-specific UV disinfection system operating specifications in lieu of the specification in Special Provisions VII.C.4.b.i and ii. Dischargers that use UV disinfection shall also provide a description of chlorine use and demonstration that chlorine use is managed properly if chlorine is used within the treatment system for cleaning and/or maintenance purposes.

IV. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order serves as WDR's pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from municipal wastewater treatment facilities that meet water quality objectives/criteria at the point of discharge, as described herein, to surface waters.

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plans.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.

- a. **Basin Plans.** The Central Valley Water Board adopted a Water Quality Control Plan, Fourth Edition (Revised July 2016 with approved amendments), for the Sacramento and San Joaquin River Basins and a Water Quality Control Plan, Second Edition (Revised July 2016 with approved amendments), for the Tulare Lake Basin (hereinafter Basin Plans) that designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters addressed through the plans. Requirements in this Order implement the Basin Plans. The Basin Plans identify the typical beneficial uses as follows: municipal and domestic supply; agricultural irrigation; stock watering; process supply; service supply; hydropower supply; water contact recreation; canoeing and rafting recreation; other non-contact water recreation; warm freshwater aquatic habitat; cold freshwater habitat; warm fish migration habitat; cold fish migration habitat; warm and cold spawning habitat; wildlife habitat; navigation; rare, threatened, or endangered species habitat; groundwater recharge; and freshwater replenishment. The Notice of Applicability from the Executive Officer shall specify the specific beneficial uses applicable to the receiving water.

The Basin Plans implement State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. On 16 April 2015, the Central Valley Water Board adopted Resolution No. R5-2015-0022, *Amendment to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins to Remove the Municipal and Domestic Supply (MUN) Beneficial Use in Twelve Constructed and/or Modified Water Bodies in the Sacramento River Basin that Receive Treated Municipal Wastewater from the Cities of Biggs, Colusa, Live Oak, or Willows*, which became effective on 21 April 2016. Per Resolution No. R5-2015-0022, the Basin Plan was amended to provide an exception to State Water Board Resolution 88-63 for the water bodies listed in Table F-1.

Table F-1. Water Bodies That Meet Drinking Water Policy (Resolution 88-63) Exceptions

County	Water Body Name	Description	Approximate GIS Coordinates (WGS84 Datum)	
			Starting Location	Ending Location
Butte	Cherokee Canal	Cherokee Canal runs southwest from the Richvale area (near Nelson Shippee Road) to Butte Creek, west of the City of Live Oak.	(39.537741, -121.707079)	(39.285685, -121.921656)
Butte	Lateral K	Lateral K is part of Reclamation District 833 and starts near 8th Street in the City of Biggs and travels southwest past the City of Biggs Wastewater Treatment Plant to the Main Drainage Canal.	(39.421894, -121.71297)	(39.406837, -121.725361)
Butte	Main Drainage Canal	The Main Drainage Canal (also known as the Main Drain C) is part of Reclamation District 833 and starts on the south end of the City of Biggs near Trent Street and runs southwest to the Cherokee Canal.	(39.41041, -121.704258)	39.327924, -121.882067
Colusa	New Ditch (2011)	New Ditch (2011) starts near the south end of the Colusa Wastewater Treatment Plant and runs south, parallel to the unnamed tributary, until the two water bodies join near the effluent outfall and weir.	(39.180224, -122.031358)	(39.174267, -122.031274)
Colusa	Powell Slough	Powell Slough begins just north of Highway 20, downstream of Hopkins Slough, and runs south until its confluence with the Colusa Basin Drain.	(39.211133, -122.062955)	(39.161267, -122.038445)
Colusa	Sulphur Creek	Lower two miles from Schoolhouse Canyon to its confluence with Little Bear Creek.	(39.035631, -122.437619)	(39.040144, -122.408168)
Colusa	unnamed tributary (to Powell Slough)	Unnamed tributary to Powell Slough starts near Will S. Green Avenue and runs west and southwest to Powell Slough .	(39.188028, -122.02328)	(39.166857, -122.034722)
Glenn	Ag Drain C	Glenn-Colusa Irrigation District's Ag Drain C (segments also known as North Fork Logan Creek and Logan Creek) runs southeast from Highway 5 near Highway 99W through the Sacramento Wildlife Refuge to the Colusa Basin Drain .	(39.498519, -122.199216)	(39.356401, -122.082675)
Sutter	East Interceptor Canal	The East Interceptor Canal starts at Pease Road and runs west until it meets the Wadsworth Canal.	(39.170745, -121.670588)	(39.171003, -121.727014)
Sutter	Lateral 1	Lateral 1 is part of Reclamation District 777 and starts near the City of Live Oak's Wastewater Treatment Plant and runs south and west to the Western Intercepting Canal.	(39.257501, -121.678718)	(39.201348, -121.696329)
Sutter	Lateral 2	Lateral 2 is part of Reclamation District 777. It starts on the south end of the City of Live Oak near Treatment Plant Access Road and runs south and then west past the City of Live Oak's Treatment Plant outfall until it meets Lateral 1.	(39.264739, -121.669314)	(39.257501, -121.678718)

County	Water Body Name	Description	Approximate GIS Coordinates (WGS84 Datum)	
			Starting Location	Ending Location
Sutter	Western Intercepting Canal <i>(not to be confused with West Interceptor Canal)</i>	Western Interceptor Canal is under shared management between Reclamation District 777 and Reclamation District 2056. It starts south of Sanders Road and runs south until it meets the East Interceptor Canal.	(39.201248, -121.696329)	(39.17092, -121.695374)
Sutter	Wadsworth Canal	The Wadsworth Canal starts just north of Butte House Road and runs southwest until it meets the Sutter Bypass.	(39.171003, -121.727014)	(39.113605, -121.768985)

On 6 June 2014, the Central Valley Water Board adopted Resolution No. R5-2014-0074, *Amendments to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins and the Water Quality Control Plan for the Tulare Lake Basin to Add Policies for Variances from Surface Water Quality Standards for Point Source Dischargers, Variance Program for Salinity, and Exception from Implementation of Water Quality Objectives for Salinity*, which became effective under the Clean Water Act on 8 July 2016 upon approval by U.S. EPA.

- b. **Bay-Delta Plan.** The current *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) was adopted in December 2006 by the State Water Board, amending and superseding the 1995 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection. On 1 June 2011, the Superior Court for Sacramento County entered a judgment and peremptory writ of mandate in the matter of City of Tracy v. State Water Resources Control Board (Case No; 34-2009-8000-392-CUWM-GDS), ruling that the South Delta salinity objectives shall not apply to the City of Tracy and other municipal dischargers in the South Delta area pending reconsideration of the South Delta salinity objectives under Water Code §13241 and adoption of a proper program of implementation under Water Code §13242 that includes municipal dischargers. The State Water Board is currently considering new salinity and flow objectives in the South Delta that will address the court order. Therefore, at the time this Order was adopted the South Delta salinity objectives were not applicable to the Discharger.

The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999, and revised on 15 March 2000. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project and the State Water Project in the Southern Delta, and approves a petition to change places of use and purposes of use of the Central Valley Project. The requirements within this Order are consistent with the Bay-Delta Plan.

- c. **Thermal Plan.** The State Water Board adopted the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan) on 7 January 1971, and amended this plan on 18 September 1975. This plan contains temperature objectives for surface waters. The Thermal Plan is applicable to the discharges from municipal wastewater treatment facilities in the Sacramento-San Joaquin Delta. For the purposes of the Thermal Plan, these discharges are considered to be an Existing Discharge of Elevated Temperature Waste to an Estuary, as defined in the Thermal Plan.

Therefore, Dischargers in the Sacramento-San Joaquin Delta must meet the water quality objective at Section 5.A(1) of the Thermal Plan, which requires compliance with the following:

- i. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.
- ii. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.
- iii. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.
- iv. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

Requirements of this Order implement the Thermal Plan.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain federal water quality criteria for priority pollutants.
3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plans. The SIP became effective on 18 May 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005, that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
4. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plans implement, and incorporate by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.
5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as

stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

6. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
7. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
8. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a) of the Water Code, requires that "the Regional Water Board shall prescribe effluent limitations as part of the WDR's of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective".

The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for the Facilities covered under this Order. Therefore, a reasonable potential analysis based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

However, as detailed elsewhere in this Order, available effluent data indicate that there are constituents present in the effluent that have a reasonable potential to cause or contribute to exceedances of water quality standards and require inclusion of effluent limitations based on federal and state laws and regulations.

9. **Storm Water Requirements.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the federal regulations. The State Water Board does not require wastewater treatment facilities with design flows less than 1 MGD to obtain coverage under the Water Quality Order 2014-0057-DWQ, NPDES General Permit No. CAS000001, General Permit for Storm Water Discharges Associated with Industrial Activities (Industrial Storm Water General Permit). The Industrial Storm Water General Permit also does not require facilities to obtain coverage if discharges of storm water are regulated under another individual or general NPDES permit adopted by the State Water Board or Regional Water Board (Finding I.B.20). This General Order does not regulate storm water.

D. Impaired Water Bodies on CWA 303(d) List

1. Under section 303(d) of the CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 26 June 2015, U.S. EPA gave final approval to California's 2012 section 303(d) List of Water Quality Limited Segments. The Basin Plans reference this list of Water Quality Limited Segments (WQLS's), which are defined as "...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate effluent limitations for point sources (40 C.F.R. part 130, et seq.)." The Basin Plan for the Sacramento and San Joaquin River Basins states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*" The Basin Plan for the Tulare Lake Basin states, "*Additional treatment beyond minimum federal requirements will be imposed on dischargers to [WQLSs]. Point source dischargers will be assigned or allocated a maximum allowable load of critical pollutants.*" Impaired waters do not fully support beneficial uses.

Many water bodies in the Central Valley Region are listed on the 303(d) list as impaired for mercury. The Central Valley Water Board is in the process of developing TMDL's for these water bodies. In order to limit mercury loads to current levels until TMDL's can be established, this General Order requires effluent performance-based effluent limitations for Dischargers proposing to discharge to water bodies that are impaired for mercury. If the Central Valley Water Board plans to adopt a TMDL after the year 2022, this Order includes a final effluent limitation for total mercury. If the Central Valley Water Board plans to adopt a TMDL before the year 2022 (i.e., within the term of this General Order), this General Order includes an interim effluent limitation for total mercury effective until this General Order is amended to implement a wasteload allocation (WLA) adopted as part of a TMDL for mercury.

2. **Total Maximum Daily Loads (TMDL's).** U.S. EPA requires the Central Valley Water Board to develop TMDL's for each 303(d) listed pollutant and water body combination. The Central Valley Water Board has adopted several TMDL's for water bodies in the Central Valley Region. Of these, the Central Valley Water Board finds that the following TMDL's are applicable to Dischargers to be covered by this General Order:
 - a. **Sacramento-San Joaquin Delta Methylmercury TMDL.** This TMDL is applicable to Dischargers within the legal boundaries of the Sacramento-San Joaquin Delta (see Appendix 43 of the Basin Plan for the Sacramento and San Joaquin River Basins for a list of Delta waterways subject to the TMDL). The TMDL establishes WLA's for methylmercury for point source discharges in Table IV-7B of the Basin Plan for the Sacramento and San Joaquin River Basins.
 - b. **Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL.** This TMDL is applicable to Dischargers within the legal boundaries of the Sacramento-San Joaquin Delta (see Appendix 42 of the Basin Plan for the Sacramento and San Joaquin River Basins for a list of Delta waterways subject to the TMDL). The TMDL establishes WLA's for diazinon and chlorpyrifos at page IV-36.03.01 of the Basin Plan for the Sacramento and San Joaquin River Basins.
 - c. **Sacramento and Feather Rivers Diazinon and Chlorpyrifos TMDL.** This TMDL is applicable to Dischargers to the Sacramento River and Feather River. The TMDL

establishes WLA's for diazinon and chlorpyrifos at pages IV-36.00 and IV-37.01 of the Basin Plan for the Sacramento and San Joaquin River Basins.

- d. **San Joaquin River Basin Diazinon and Chlorpyrifos TMDL.** This TMDL is applicable to Dischargers to the San Joaquin River and its tributaries downstream of the major dams and reservoirs. The TMDL establishes WLA's for diazinon and chlorpyrifos at pages IV-36.02 and IV-36.03 of the Basin Plan for the Sacramento and San Joaquin River Basins.
3. The 303(d) listings and TMDL's have been considered in the development of the Order. A pollutant-by-pollutant evaluation of each pollutant of concern is described in V.C.3 of this Fact Sheet.

E. Other Plans, Policies and Regulations

1. **Title 27.** The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20005 *et seq* (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:
 - a. The waste consists primarily of domestic sewage and treated effluent;
 - b. The WDR's are consistent with water quality objectives; and
 - c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

V. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 C.F.R. § 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 C.F.R. section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that *"are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality."* Federal regulations, 40 C.F.R. section 122.44(d)(1)(vi), further provide that *"[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits."*

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations (WQBEL's) to attain and maintain applicable numeric and

narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan for the Sacramento and San Joaquin River Basins at page IV-17.00 and the Basin Plan for the Tulare Lake Basin at page IV-21, contain implementation policies, “Policy for Application of Water Quality Objectives” and “Application of Water Quality Objectives”, respectively, that specify that the Central Valley Water Board “*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.*” This Policy complies with 40 C.F.R. section 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) U.S. EPA’s published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board’s “Policy for Application of Water Quality Objectives”)(40 C.F.R. § 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plans include numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: “*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*” The Basin Plans state that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, “*...water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)*” in Title 22 of CCR. The Basin Plans further state that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCL’s. The narrative tastes and odors objective states: “*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*”

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this General Order).** This prohibition is based on Water Code section 13260 that requires filing of a ROWD before waste discharges can occur, except for general WDR’s or general NPDES permits that use the Notice of Intent to comply or specify the use of an alternative application form designed for the permit. Dischargers seeking authorization to discharge under this General Order are required to submit a Notice of Intent for the waste discharges described in this General Order; therefore, discharge of wastes, other than those described in section I.A and meeting the eligibility criteria in section I.B of this General Order are prohibited.
2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at 40 C.F.R. section 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define “bypass” as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Central Valley Water Board’s prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plans prohibit conditions that create a nuisance.
4. **Prohibition III.D (No inclusion of pollutant free wastewater shall cause improper operation of the Facility's systems).** This prohibition is based on 40 C.F.R. section 122.41 that requires the proper design and operation of treatment facilities.
5. **Site-Specific Prohibitions.** The Discharger shall comply with any additional site-specific prohibitions specified in the Notice of Applicability.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. Discharges from POTW's authorized by this General Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. part 133. Discharges from privately-owned treatment works must meet minimum federal technology-based requirements based on best professional judgement (BPJ) in accordance with 40 C.F.R. section 125.3.

a. POTW's

Regulations promulgated in 40 C.F.R. section 125.3(a)(1) require technology-based effluent limitations for POTW's to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTW's [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the U.S. EPA Administrator.

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based regulations apply to all POTW's and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD₅), total suspended solids (TSS), and pH.

b. Privately-Owned Treatment Works

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

- i. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- ii. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

- iii. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.
- iv. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELG's) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of BPJ to derive technology-based effluent limitations on a case-by-case basis where ELG's are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Central Valley Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

ELG's are not available for privately-owned treatment works, and the secondary treatment standards at 40 C.F.R. part 133 are not directly applicable to privately-owned treatment works. Therefore, this Order includes technology-based effluent limitations for privately-owned treatment works for BOD₅, TSS, and pH equivalent to the secondary treatment standards based on BPJ pursuant to 40 C.F.R. section 125.3, which meet the requirements for BPT and BCT. In establishing these limitations, the Central Valley Water Board considered the factors specified in 40 C.F.R. section 125.3(d). Coverage under this General Order is limited to municipal wastewater treatment facilities that receive and treat primarily municipal and domestic sewage (i.e., waste and wastewater from humans or household operations). The privately-owned treatment works that may be covered under this General Order treat wastewater similar in nature to that treated by POTW's and employ similar treatment systems. Existing control equipment and facilities are practicable and capable of meeting these limitations. The cost of complying with these limitations is reasonable given that privately-owned treatment works enrolled under this General Order are expected to be able to comply without modifying their existing operations. No process changes will be necessary; therefore, no non-water quality impacts are foreseeable. The limitations are similar to those for secondary treatment of municipal wastewater; therefore, the cost is comparable to those for a comparable POTW.

2. Applicable Technology-Based Effluent Limitations

- a. **BOD₅ and TSS.** Federal regulations at 40 C.F.R. part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment at 30 mg/L and 45 mg/L, respectively, for BOD₅ and TSS. This Order includes an average monthly effluent limitation (AMEL) of 30 mg/L and average weekly effluent limitation (AWEL) of 45 mg/L based on the secondary treatment standards for Dischargers of secondary treated wastewater that meet the eligibility criteria in section I.B.3 of this General Order. A maximum daily effluent limitation (MDEL) of 60 mg/L for BOD₅ and TSS is also included in the Order to ensure that the

treatment works are not organically overloaded and operate in accordance with design capabilities.

As discussed in section V.C.3.b.x(b) of this Fact Sheet, this Order requires WQBEL's for BOD₅ and TSS that are more stringent than the secondary treatment standards for Dischargers of tertiary treated wastewater that meet the eligibility criteria in section I.B.4 of this General Order.

In addition to the concentration-based effluent limitations described above, 40 C.F.R. section 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. This Order contains a limitation requiring an average of 85 percent removal of BOD₅ and TSS over each calendar month, which is applicable to all Dischargers.

- b. **Flow.** Effluent limitations for flow are necessary to ensure that all flows receive adequate treatment in accordance with the design specifications of the wastewater treatment system. Therefore, this Order contains an average dry weather discharge flow effluent limitation, which shall be based on the design average dry weather treatment capacity of the facility and specified in the Notice of Intent.
- c. **pH.** The secondary treatment regulations at 40 C.F.R. part 133 require that pH be maintained between 6.0 and 9.0 standard units. This Order, however, requires more stringent WQBEL's for pH to comply with the Basin Plans' water quality objectives for pH.

Table F-2. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	¹	--	--	--	--
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C) ²	mg/L	30	45	60	--	--
	lbs/day	³	3	3	--	--
	% Removal	85	--	--	--	--
pH ⁴	standard units	--	--	--	6.0	9.0
Total Suspended Solids ²	mg/L	30	45	60	--	--
	lbs/day	3	3	3	--	--
	% Removal	85	--	--	--	--

¹ The average dry weather discharge flow shall not exceed the limitations specified in the Notice of Applicability. Effluent average dry weather flow limitations specified in the Notice of Applicability shall not exceed the permitted average dry weather flow rates in a Discharger's existing individual NPDES permit without approval of an antidegradation analysis.

² Note that more stringent WQBEL's for BOD₅ and TSS are applicable to Dischargers of tertiary treated wastewater that meet the eligibility criteria in section I.B.4 of this General Order.

³ Mass-based effluent limitations shall be established in the Notice of Applicability based on the design average dry weather flow.

⁴ Note that more stringent WQBEL's for pH are applicable and are established as final effluent limitations in this Order (see section V.C.3.b.xi of this Fact Sheet).

C. Water Quality-Based Effluent Limitations (WQBEL's)

1. Scope and Authority

CWA Section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards for Dischargers of tertiary treated wastewater that meet the eligibility criteria in section I.B.4 of this General Order. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in section V.C.3.b.x(b) of this Fact Sheet.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBEL's must be established using: (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBEL's when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plans, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plans designate beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plans. In addition, the Basin Plans implement State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (see discussion at section IV.C.1.a of this Fact Sheet).

The Basin Plan for the Sacramento and San Joaquin River Basins on page II-1.00 states: *"Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning..."* and with respect to disposal of wastewaters states that *"...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses."* The Basin Plan for the Tulare Lake Basin on page II-1 states: *"Protection and enhancement of beneficial uses of water against quality degradation is a basic requirement of water quality planning under the Porter-Cologne Water Quality Control Act. In setting water quality objectives, the Regional Water Board must consider past, present, and probable future beneficial uses of water."* and with respect to disposal of wastewaters states that *"...use of waters for disposal of wastewaters is not included as a beneficial use...and are subject to regulation as activities that may harm protected uses."*

The federal CWA section 101(a)(2), states: *"it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be*

achieved by July 1, 1983. Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 C.F.R. sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. 40 C.F.R. section 131.3(e) defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 C.F.R. section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

- a. **Receiving Water and Beneficial Uses.** The discharges described in this General Order may potentially discharge to any surface waters in the Central Valley. Refer to IV.C.1.a above for a complete description of the receiving water beneficial uses. This Order contains both effluent limitations based on the MUN use and effluent limitations when the MUN use does not apply.
- b. **Effluent and Ambient Background Data.** Upon receipt of a Notice of Intent for coverage under this General Order, the Central Valley Water Board will conduct an RPA for the discharge based on *“all available, valid, relevant, representative data and information, as determined by the Central Valley Water Board”* in accordance with section 1.2 of the SIP. Based on the results of the RPA, the Notice of Applicability will specify the effluent limitations applicable to a specific Discharger. In selecting the effluent and ambient background data to be used for the RPA for a specific Discharger, the Central Valley Water Board will consider the following:
 - i. **Sources and Age of Data.** For Dischargers currently regulated under an existing individual NPDES permit, the Central Valley Water Board will conduct the RPA using effluent and receiving water monitoring data obtained from the California Integrated Water Quality System (CIWQS) and submitted in accordance with section 6 of the Notice of Intent (Attachment B). The Central Valley Water Board will use effluent and receiving water monitoring data collected within 3 years of the date of the Notice of Intent, except where a major facility upgrade was completed within the last 3 years and effluent monitoring data collected prior to the upgrade is not representative of effluent water quality or where no monitoring data for a parameter was collected during the last 3 years.

For new Dischargers, the RPA will be based on either actual or estimated effluent data and receiving water sampling submitted in section 7 of the Notice of Intent (Attachment B). If the proposed new discharge is from an operational facility (e.g., a facility that currently discharges to land) and it is feasible to collect a representative sample of the proposed effluent, section 7 of the Notice of Intent requires the Discharger to collect a sample of the proposed effluent and analyze it for priority pollutants and other constituents of concern. If the proposed new discharge is from a new facility for which construction and startup has not been completed, or a representative sample of the proposed discharge cannot otherwise be collected, section 7 of the Notice of Intent requires the Discharger to provide an engineering report estimating the character of the effluent for priority pollutants and other constituents of concern. In such cases, the Notice of Applicability will require effluent sampling to be conducted within 18 months for a new facility that is fully operational at the time of the issuance of the Notice of Applicability, or within 21 months following completion of construction of a new

facility that is not fully operational at the time of the issuance of the Notice of Applicability.

- ii. **Inappropriate or Insufficient Data.** Section 1.2 of the SIP states, “*The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy. Instances where such consideration is warranted include, but are not limited to, the following: evidence that a sample has been erroneously reported or is not representative of effluent or ambient receiving water quality; questionable quality control/quality assurance practices; and varying seasonal conditions.*” Consistent with section 1.2 of the SIP, the Central Valley Water Board will not use data that are inappropriate or insufficient for purposes of the RPA, including where sample contamination or other issues are documented in a laboratory report or where documentation is available indicating that samples were collected under conditions that are not characteristic of the discharge.
- iii. **Estimated Data.** Based on the following considerations, the Central Valley Water Board will not use estimated (i.e., j-flagged or detected but not quantified (DNQ)) data.

SIP Section 2.4.2 states that the Minimum Level (ML) is the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences.

- (a) Required ML's are listed in Appendix 4 of the SIP. Where more than one ML is listed in Appendix 4, the discharger may select any one of the cited analytical methods for compliance determination. The selected ML used for compliance determination is referred to as the Reporting Level (RL).
- (b) An RL can be lower than the ML in Appendix 4 only when the discharger agrees to use a RL that is lower than the ML listed in Appendix 4. In general, the Central Valley Water Board does not have any agreements with any Dischargers potentially eligible for coverage under this General Order to use a RL lower than the listed ML.
- (c) SIP Section 1.2 requires that the Regional Board use all available, valid, relevant, representative data and information, as determined by the Regional Board, to implement the SIP. SIP Section 1.2 further states that the Regional Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.
- (d) Data reported below the ML indicates the data may not be valid due to possible matrix interferences during the analytical procedure.
- (e) Further, SIP Section 2.4.5 (Compliance Determination) supports the insufficiency of data reported below the ML or RL. In part it states, “*Dischargers shall be deemed out of compliance with an effluent limitation, for reporting and administrative enforcement purposes, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL.*” Thus, if submitted data are below the RL, that data cannot be used to determine compliance with effluent limitations.
- (f) Data reported below the ML are not considered valid data for use in determining Reasonable Potential. Therefore, in accordance with Section 1.2 of the SIP, the Central Valley Water Board has determined that data reported

below the ML are inappropriate and insufficient to be used to determine reasonable potential.

- (g) In implementing its discretion, the Central Valley Water Board is not finding that reasonable potential does not exist; rather the Central Valley Water Board cannot make such a determination given the invalid data. Therefore, the Central Valley Water Board will require additional monitoring for such constituents until such time a determination can be made in accordance with the SIP policy.

Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of limitations, additional monitoring may be established in the Notice of Applicability if determined necessary by the Central Valley Water Board. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, the Notice of Intent may be modified by adding an appropriate effluent limitation.

- c. **Assimilative Capacity/Mixing Zone.** The effluent limitations for discharges covered by this General Order are calculated assuming no dilution. Because this General Order is intended to serve as a general order and covers discharges to all surface waters in the Central Valley, the effluent limitations established pursuant to this General Order are established to achieve the most protective water quality objective for the surface water beneficial uses in the Central Valley. Therefore, it is assumed there is no assimilative capacity and no dilution credits have been granted.

An exception to this assumption may be applied based on the demonstration of a mixing zone in accordance with section 1.4.2 of the SIP and an approved mixing zone study demonstrating compliance with water quality objectives in the receiving water as prescribed in the Basin Plans. This exception process is more appropriate for an individual order, and would not be appropriate for a general order that should be protective of most stringent water quality objectives and beneficial uses. If a Discharger requests that a dilution credit be included in the computation of an effluent limitation or that a mixing zone be allowed, an individual order will be required. However, if no mixing zone is proposed, the discharge may be eligible for coverage under this General Order.

- d. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. U.S. EPA recommends conversion factors (also referred to as translators) to translate dissolved concentrations to total concentrations. The default U.S. EPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria, except for copper and zinc for the City of Grass Valley, Wastewater Treatment Plant.

In the individual NPDES permit for the City of Grass Valley, Wastewater Treatment Plant (Order R5-2016-0012, NPDES No. CA0079898), the Central Valley Water Board approved the use site-specific translators for copper and zinc based on the February 2008 *Development and Selection of Translators for Copper, Lead, and Zinc in Wolf Creek* and September 2008 Infeasibility Report. Consistent with the individual NPDES permit, this General Order allows for the acute and chronic CTR criteria and associated effluent limitations (if necessary) for copper and zinc to be calculated with the following translators for the City of Grass Valley, Wastewater Treatment Plant:

Table F-3. Metal Translators for City of Grass Valley, Wastewater Treatment Plant

Parameter	Translator (1/fD)	
	Acute	Chronic
Copper	1.05	1.19
Zinc	1.03	1.19

- e. **Hardness-Dependent CTR Metals Criteria.** The CTR and the NTR contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

When issuing Notices of Applicability, the Central Valley Water Board will determine criteria for hardness-dependent metals based on the hardness of the receiving water (actual ambient hardness) as required by the SIP¹ and the CTR². The SIP and the CTR require the use of “receiving water” or “actual ambient” hardness, respectively, to determine effluent limitations for these metals. The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones³.

For non-effluent dominated water bodies, design flows for aquatic life criteria include the lowest 1-day flow with an average reoccurrence frequency of once in 10 years (1Q10) and the lowest average 7 consecutive day flow with an average reoccurrence frequency of once in 10 years (7Q10).⁴ For ephemeral water bodies, the receiving water is effluent dominated at design discharge conditions. Under these regularly occurring critical conditions, the effluent is the receiving water that is used to define the ambient receiving water conditions to define the appropriate water quality criteria in accordance with the CTR and SIP.

The CTR also indicates that the design conditions should be established such that the appropriate criteria are not exceeded more than once in a 3 year period on average.⁵ The CTR requires that when mixing zones are allowed the CTR criteria apply at the edge of the mixing zone, otherwise the criteria apply throughout the water body including at the point of discharge.⁶ The CTR does not define the term “ambient,” as applied in the regulations. Therefore, the Central Valley Water Board has considerable discretion to consider upstream and downstream ambient conditions when establishing the appropriate water quality criteria that fully complies with the CTR and SIP.

Summary Findings

Given the high variability in ambient hardness values, there is no single hardness value that describes the ambient receiving water for all possible scenarios (e.g., minimum, maximum). Because of this variability, staff has determined that the Central Valley Water Board has discretion to select ambient hardness values within

¹ The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.

² The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO₃), or less, the actual ambient hardness of the surface water must be used (40 C.F.R. § 131.38(c)(4)).

³ 40 C.F.R. §131.38(c)(4)(ii)

⁴ 40 C.F.R. §131.38(c)(2)(iii) Table 4

⁵ 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

⁶ 40 C.F.R. §131.38(c)(2)(i)

the range of the minimum and maximum receiving water hardness. When issuing Notices of Applicability, the Central Valley Water Board will use the ambient hardness values within this range for the following reasons:

- i. Using the ambient receiving water hardness values will result in criteria and effluent limitations that ensure protection of beneficial uses under all ambient receiving water conditions.
- ii. The Water Code mandates that the Central Valley Water Board establish permit terms that will ensure the reasonable protection of beneficial uses. Using the lowest measured ambient hardness to calculate effluent limitations is not required to protect beneficial uses. Calculating effluent limitations based on the lowest measured ambient hardness is not required by the CTR or SIP, and is not reasonable as it would result in overly conservative limits that will impart substantial costs to Dischargers and ratepayers without providing any additional protection of beneficial uses. In compliance with applicable state and federal regulatory requirements, after considering the entire range of ambient hardness values, Board staff will use ambient hardness values to calculate effluent limitations for hardness-dependent metals that are protective of beneficial uses under all flow conditions.
- iii. Using an ambient hardness that is higher than the minimum observed ambient hardness will result in limits that may allow increased metals to be discharged to the receiving water, but such discharge is allowed under the antidegradation policy (State Water Board Resolution 68-16). The Central Valley Water Board finds that this degradation is consistent with the antidegradation policy (see antidegradation findings in Section V.D.4 of the Fact Sheet). The antidegradation policy requires Dischargers to meet WDR's which will result in the best practicable treatment or control of the discharge necessary to assure that: a) a pollution or nuisance will not occur, and b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

Background

The State Water Board provided direction regarding the selection of hardness in two precedential water quality orders: WQO 2008-0008 for the City of Davis Wastewater Treatment Plant (Davis Order) and WQO 2004-0013 for the Yuba City Wastewater Treatment Plant (Yuba City Order). The State Water Board recognized that the SIP and the CTR do not discuss the manner in which hardness is to be ascertained, thus regional water boards have considerable discretion in determining ambient hardness so long as the selected value is protective of water quality criteria under the given flow conditions. (Davis Order, p.10). The State Water Board explained that it is necessary that, "*The [hardness] value selected should provide protection for all times of discharge under varying hardness conditions.*" (Yuba City Order, p. 8). The Davis Order also provides that, "*Regardless of the hardness used, the resulting limits must always be protective of water quality criteria under all flow conditions.*" (Davis Order, p. 11)

The equation describing the total recoverable regulatory criterion, as established in the CTR, is as follows:

$$\text{CTR Criterion} = \text{WER} \times (e^{m[\ln(H)]+b}) \text{ (Equation 1)}$$

Where:

H = ambient hardness (as CaCO_3)¹

WER = water-effect ratio

m, b = metal- and criterion-specific constants

The direction in the CTR regarding hardness selection is that it must be based on ambient hardness and consistent with design discharge conditions for design flows and mixing zones. Consistent with design discharge conditions and design flows means that the selected “design” hardness must result in effluent limitations under design discharge conditions that do not result in more than one exceedance of the applicable criteria in a 3 year period.² Where design flows for aquatic life criteria include the lowest 1-day flow with an average reoccurrence frequency of once in 10 years (1Q10) and the lowest average 7 consecutive day flow with an average reoccurrence frequency of once in 10 years (7Q10). Since effluent dominated water bodies regularly contain no upstream flow, the critical design flow for effluent dominated water bodies is zero.

Ambient Conditions

The Central Valley Water Board will consider the entire range of ambient hardness concentrations to determine the appropriate ambient hardness to calculate the CTR criteria and effluent limitations that are protective under all discharge conditions.

Approach to Derivation of Criteria

Ambient hardness is variable. Because of this variation, there is no single hardness value that describes the ambient receiving water for all possible scenarios (e.g., minimum, maximum, mid-point). While the hardness selected must be hardness of the ambient receiving water, selection of an ambient receiving water hardness that is too high would result in effluent limitations that do not protect beneficial uses. Also, the use of minimum ambient hardness would result in criteria that are protective of beneficial uses, but such criteria may not be representative considering the wide range of ambient conditions.

Reasonable worst-case ambient conditions. To determine whether a selected ambient hardness value results in effluent limitations that are fully protective while complying with federal regulations and state policy, the Central Valley Water Board will conduct an analysis considering varying ambient hardness and flow conditions. To do this, the Central Valley Water Board will ensure that the receiving water hardness and criteria selected for effluent limitations are protective under “reasonable-worst case ambient conditions.” These conditions represent the receiving water conditions under which derived effluent limitations would ensure protection of beneficial uses under all ambient flow and hardness conditions.

Reasonable worst-case ambient conditions:

- “Low receiving water flow.” CTR design discharge conditions (1Q10 and 7Q10) will be selected to represent reasonable worst case receiving water flow conditions for non-effluent dominated water bodies. For effluent-dominated water bodies, the critical design flow is zero.

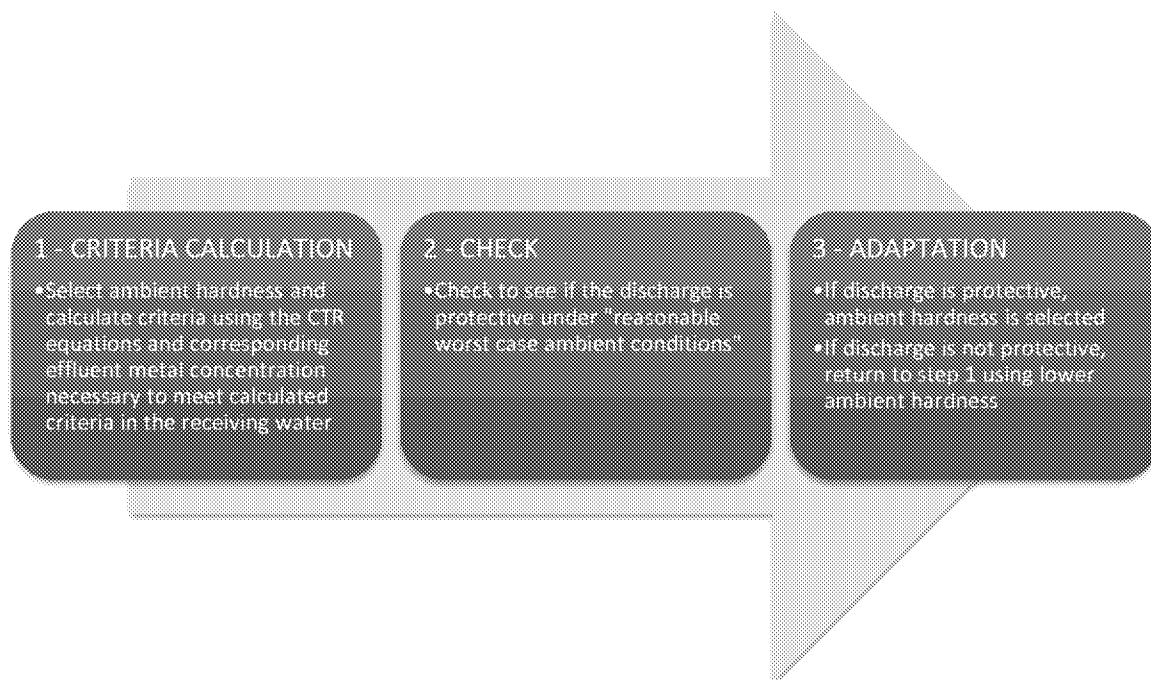
¹ For this discussion, all hardness values are expressed in mg/L as CaCO_3 .

² 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

- “High receiving water flow (maximum receiving water flow).” This additional flow condition has been selected consistent with the Davis Order, which required that the hardness selected be protective of water quality criteria under all flow conditions.
- “Low receiving water hardness.” The minimum ambient receiving water hardness condition will be selected to represent the reasonable worst case receiving water hardness.
- “Background ambient metal concentration at criteria.” This condition assumes that the metal concentration in the background receiving water is equal to CTR criteria (upstream of the facility’s discharge). This is a design condition that will be used in this analysis to ensure that limits are protective of beneficial uses even in the situation where there is no assimilative capacity.

Iterative approach. An iterative analysis will be used to select the ambient hardness to calculate the criteria that will result in effluent limitations that protect beneficial uses under all flow conditions.

The iterative approach is summarized in the following algorithm and described below in more detail.



1. **CRITERIA CALCULATION.** CTR criteria are calculated using the CTR equations based on actual measured ambient hardness sample results, starting with the maximum observed ambient hardness. Effluent metal concentrations necessary to meet the above calculated CTR criteria in the receiving water are calculated in accordance with the SIP.¹ This should not be confused with an effluent limit. Rather, it is the effluent concentration allowance (ECA), which is synonymous with the wasteload allocation defined by U.S. EPA as “a *definition of effluent water quality that is necessary to meet the water quality standards in the*

¹ SIP Section 1.4.B, Step 2, provides direction for calculating the Effluent Concentration Allowance.